

## PATENT SPECIFICATION

DRAWINGS ATTACHED

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## COMPLETE SPECIFICATION

## Improvements in or relating to Container-Dispensers

We, CALUMET MANUFACTURING CO., INC., a corporation organised under the laws of the State of New York, United States of America, of 565 Fifth Avenue, City of New York, State of New York, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to container-dispensers which are particularly suitable for cosmetics in solid stick form, such as cologne sticks, perfume sticks, deodorant sticks, shaving sticks, cream sticks, and the like but which may also be made suitable for cosmetics in flowable or fluid form, such as pastes, creams, lotions, etc. These cosmetics may contain alcohol, essential oils, deodorants, fatty acids and the like.

General objects of the invention are to provide a container-dispenser which is of simple, cheap, practical and durable construction; which is sealed when not in use to prevent leakage or evaporation of the volatile substances contained in the cosmetics; which will not contaminate the cosmetics or suffer deterioration from the substances which they contain, and which will act as a mold to permit the cosmetics to be cast or formed directly therein, instead of being cast in separate molds as ordinarily is done in the case of sticks in solid form.

To these ends, the present invention broadly consists in providing a liquid-tight and air-tight container-dispenser for cosmetics of the volatile variety, comprising a tubular body with a bottom wall, an interiorly threaded follower arranged within the body and having a slidable but non-rotatable engagement therewith, an exteriorly threaded stem also arranged within the body and having co-operative engagement with the follower, said stem being rotatably mounted at its lower end on the bottom wall of the body, a rotatable knob arranged outside of the body at the base of the

container-dispenser and secured non-rotatably to the stem, and a sealing washer outside of the body between the rotatable knob and the bottom wall of the body.

In one specific embodiment, the container-dispenser comprises a tubular—preferably cylindrical—body closed at the bottom but open at the top for the projection of a solid stick, a follower embedded in the stick and slidably engaged with ribs on the body to project the stick from or retract it into the body, a long screw-threaded stem extending axially within the body and rotatably mounted in the bottom wall of the body, said stem being threaded to the follower for raising and lowering it within the body, a turning knob also rotatably mounted at the base of the body and rigidly secured to the stem for rotating the latter in opposite directions to actuate the follower, and a removable cover to close the body at the top. All of these parts are composed of molded plastic material which will possess the properties above stated and which will be completely inert with respect to the substances composing the cosmetic sticks. The body of the container is sealed at the base by a rubber washer specially compounded for lubrication, such as silicone rubber, and arranged between the bottom wall of the body and the rotatable knob which actuates the stem. The removable cover will also contain a washer for sealing the body at the top when the cover is in place.

In another specific embodiment, according to which the container-dispenser is used for cosmetics in flowable or fluid form, the follower (likewise composed of molded plastic material) is made with a thin resilient wall which makes sealing contact with the inner surface of the tubular body. In this embodiment, the top of the tubular body is closed by a cap formed with a plurality of small dispensing holes. A plastic cover is applied over the cap to seal the cap holes when the cover is in place.

As a main feature of the invention, the

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threaded stem and the turning knob are made integral, as by molding in one piece, and a swivel connection is provided between this one-piece unit and the tubular body such that the parts may be readily assembled and held together by inserting the stem upwardly through a centrally located hole or opening in the bottom wall of the body. This is accomplished by making the peripheral edge or rim of the bottom wall opening resilient or elastic, as by slitting, and by forming on the stem a circular collar or bead which is of greater diameter than that of said opening. As a result of this construction, when the threaded stem is pushed up through the bottom wall opening, said opening will be temporarily enlarged or expanded to allow the stem collar to pass therethrough and will then, because of the resilient nature of its peripheral edge or rim, return to its original diameter after the collar has reached its proper position above the opening.

Once assembled, the stem and knob unit and the tubular body will remain permanently attached, even though the swivel connection will permit the knob to be turned freely in raising and lowering the follower for the projection or retraction of the stick. The rubber washer will prevent any leakage through the bottom wall opening around the stem, the dimensions of the washer being such that it will not only cover the slits formed around the opening but also create a seal in outlying areas of contact with the turning knob and the bottom wall of the tubular body.

Referring to the accompanying drawings:

Fig. 1 is an elevation of a complete container-dispenser, with the removable cover in place, designed for a solid cosmetic stick;

Fig. 2 is an exploded view, partly in section and partly in elevation, of the container-dispenser shown in Fig. 1;

Fig. 3 is an enlarged longitudinal section taken on the line 3—3 of Fig. 1;

Fig. 4 is a view similar to Fig. 3 but on a somewhat larger scale, taken at the lower part of the container dispenser and showing the rod and knob unit in process of assembly with the tubular body;

Fig. 5 is a transverse section taken on the line 5—5 of Fig. 3;

Fig. 6 is a transverse section taken on the line 6—6 of Fig. 4; and

Fig. 7 is an exploded view similar to Fig. 2 but showing a container-dispenser designed for cosmetics in flowable or fluid form.

Reference will first be made to the embodiment shown in Figs. 1 to 6.

The tubular body 1 has a relatively thin bottom wall 2 which is raised slightly above the lower end of the body to provide an annular well or recess 3 for the reception of a circular disk-line raised portion 4 formed on the turning knob 5. The bottom wall itself is also formed with a smaller centrally located

annular well or recess 6 for the reception of the rubber washer 7. The top wall of this washer recess is formed with an upstanding cone shape protuberance 8 which has a centrally located opening wherein the bearing portion 9 of the stem 10 is rotatably mounted. Such cone shaped protuberance is slitted at one or more places, as at 8a, to render the walls of the opening resiliently yielding or elastic, whereby the opening may be expanded or enlarged to permit the parts to be assembled. On its inner wall, the body 1 is formed with two long but narrow diametrically opposed guide ribs 11 for the follower 12. At the top, the body is reduced in wall thickness and is exteriorly threaded to receive the interior threads of the removable cover 13, it being noted that the cover when applied has its outer wall flush with the outer wall of the body. The removable cover contains the usual plastic sealing washer 14 for contacting the upper end of the cylindrical body when the cover is applied.

The propelling and repelling of the cosmetic stick 15 is effected by the follower 12 which is made in cup-shaped form to receive and grip the lower end of the stick when the latter is molded in the container. In one form, the follower comprises a circular wall 12a having a diameter slightly less than that of the inner wall of the cylindrical body, a centrally located hub 12b formed with interior screw threads to co-operate with the threaded stem 10, and a bottom wall 12c which connects the hub with the wall. The bottom wall 12c contains a cone-shaped recess to accommodate the cone-shaped protuberance 8 when the follower is in its lowermost position. At the outer extremities, the circular wall 12a is formed with vertical through-cuts or slots to receive the guide ribs 11 within the body.

The follower 12 is raised and lowered within the body by the long screw-threaded stem 10 which is rotatably mounted at the base of the container and made integral with the turning knob 5. Here it may be noted that the screw threads of the follower and the stem are left-hand threads, so that when the knob is rotated clockwise in the usual manner, the stick will be projected from the container. At its lower end, but spaced some distance above the bottom wall of the body, the stem is formed with a plain circular collar 16 which holds the parts in assembled relation, this collar being of greater diameter than the centrally located opening formed in the bottom wall protuberance 8. Below the collar, the plain cylindrical bearing portion 9 of the stem is rotatably mounted in the central opening of the body bottom wall protuberance 8 and passes through a similar hole in the rubber washer 7.

The circular base turning knob is of slightly greater diameter than that of the body and is ribbed or roughened to facilitate its rotation

by hand. The rim portion of the knob is flat and contacts with the lower cylindrical end portion of the body. As above indicated, the knob has a circular disk-like raised portion 4 to fit within the lower well 3 formed within the body by the raising of its bottom wall 2. On top of this raised portion, the knob is formed with another circular disk-like raised portion 17 to fit within the smaller annular wall recess 6 in which the rubber washer 7 is located.

The method of assembly will now be clear; the rubber washer 7 is first slipped over the threaded stem 10 and pushed all the way down to its base position on the turning knob. The stem is then inserted into the body from the bottom, passing through the central opening formed in the bottom wall protuberance 8. Only a slight force is necessary to push the collar 16 at the lower end of the stem through the opening, due to the slitted form of the conical protuberance 8, and once the collar has reached its home position above the opening, the spring fingers forming the protuberance snap back to their original position and lock the stem with the attached knob in proper assembled position. The cone shape of the protuberance, in which the bottom wall opening is formed, will aid in assembling the parts in this manner. It may be noted that the dimensions of the parts are such that the rubber washer will be placed under compression during the assembly operation, being forced up into and slightly expanded in the receiving well 6 formed in the bottom wall of the body. It may also be noted that the opening through the rubber washer is slightly smaller in diameter than the cylindrical bearing portion 9 of the stem, so that when the washer is stretched over said bearing portion it will exert a compressive force in forming a seal around said portion. The follower 12 is inserted through the open end of the body and then threaded onto the stem 10 by turning the knob 5 in the proper direction until the follower reaches its lowermost position within the body. The casting of the stick in the container may then be carried out by pouring the material in a hot liquid condition from the top and allowing it to cool and solidify. As will be understood, the seal at the bottom of the container will prevent the escape of the hot liquid material. Before or after the liquid congeals, the removable cover 13 may be applied, its washer 14 sealing the container at the top.

Reference will now be made to Fig. 7 which shows a container-dispenser designed for the use of cosmetics in flowable or fluid-like form. This second embodiment differs from the first only in respect to the follower 20 and the dispensing cap 21. The follower 20 is of substantially the same form as the follower 12 except that the follower 20 is molded with a thin resilient wall 20a which

makes sealing contact with the inner surface of the tubular body 1 and the guide ribs 11. The dispensing cap 21 is screwed onto the upper reduced end of the tubular body 1 and is formed with a dome-shaped top containing a plurality of small openings or orifices 22 through which the cosmetic material may be forced when the follower 20 is raised by the rotation of the turning knob 5. Around its lower end, the cap 21 is formed with a channel portion 23 to receive the lower edge of the cover 24 when applied over the cap. The cover 24, it will be noted, is formed with a curved portion 25 which conforms to the dome-shaped top of the cap 21 and thus acts to seal the cap holes 22 when the cover is in place.

The method of assembly is the same as in the first embodiment, so far as the stem and knob unit and the follower are concerned. Once the container-dispenser has been filled with the cosmetic material, the dispensing cap 21 will then be applied, followed by the application of the sealing cover 24.

#### WHAT WE CLAIM IS:—

1. A container-dispenser for cosmetics comprising, in combination, a tubular body with a bottom wall, an interiorly threaded follower arranged within the body and having a slidable but non-rotatable engagement therewith, an exteriorly threaded stem also arranged within the body and having cooperative engagement with the follower, and a rotatable knob arranged outside of the body at the base of the container-dispenser and secured non-rotatably to the stem, the threaded stem and turning knob being made as a unit having a swivel connection with the bottom wall of the tubular body, which swivel connection permits the stem and knob to be resiliently assembled with the body and held together therewith by inserting the stem upwardly through a centrally located hole or opening in said bottom wall.

2. A container-dispenser according to claim 1, wherein the peripheral edge or rim of the bottom wall opening is resilient or elastic and is caused to expand temporarily during the assembly of the parts by a collar or bead on the threaded stem of greater diameter than the bottom wall opening.

3. A container-dispenser according to claim 2, wherein the peripheral edge or rim of the bottom wall opening is in the form of a cone-shaped protuberance projecting upwardly into the tubular body.

4. A container-dispenser according to claim 2 or claim 3, wherein the peripheral edge or rim of the bottom wall opening is slitted to give it the desired resilience or elasticity.

5. A container-dispenser according to any one of claims 1 to 4, wherein the threaded stem has a plain cylindrical bearing portion located between the bead or collar thereon and the rotatable knob for free rotation within the bottom wall opening.

6. A container-dispenser according to any one of claims 1 to 5, wherein the threaded stem and rotatable knob are composed of plastic material and are molded in one piece.
7. A container-dispenser according to any one of claims 1 to 6, wherein the tubular body as well as the follower are also made of molded plastic material.
8. A container-dispenser according to any one of claims 1 to 7, wherein the tubular body is sealed at the base by a lubricated washer such as silicone rubber arranged between the bottom wall and the rotatable knob.
9. A container-dispenser according to claim 3 or 4, wherein the rubber washer as defined in claim 8 is dimensioned not only to cover the slits formed in the peripheral edge or rim of the bottom wall opening but also to create a seal in outlying areas of contact with the rotatable knob and said bottom wall.
10. A container-dispenser according to claim 9, wherein the rubber washer is placed under compression in the assembled condition of the parts.
11. A container-dispenser according to claim 5, wherein the rubber washer as defined in any one of claims 8 to 10, is formed with a central opening which is smaller in diameter than the plain cylindrical bearing portion of the threaded stem so as thereby to exert a compressive force forming a seal around said bearing portion.
12. A container-dispenser according to any one of claims 1 to 7, wherein the rubber washer as defined in any one of claims 8 to 10, is contained in an annular well or recess formed in the bottom wall of the tubular body.
13. A container-dispenser according to any one of the foregoing claims, wherein the rotatable knob is formed at its upper side with a circular disk-like raised portion fitted into an annular well or recess formed in the base of the tubular body.
14. A container-dispenser according to either claim 12 or claim 13, wherein the rotatable knob is formed at its upper side with a circular disk-like raised portion fitted in the rubber washer containing well or recess formed in the bottom wall of the tubular body.
15. A container-dispenser according to claim 3, wherein the follower is formed in its bottom wall with a cone-shaped recess to accommodate the inwardly projecting cone-shaped protuberance forming the peripheral edge or rim of the bottom wall opening.
16. A container-dispenser according to any one of the foregoing claims, wherein the outer wall of the follower is resilient and makes a sealing contact with the inner surface of the tubular body.
17. A container-dispenser according to claim 16, wherein the tubular body is provided at the top with a cap portion formed with dispensing holes for cosmetics in fluid form.
18. The container-dispenser for cosmetics in solid stick form, having its parts constructed, arranged and adapted to operate substantially as described with reference to Figs. 1 to 6 of the accompanying drawings.
19. The container-dispenser for cosmetics in fluid form having its parts constructed, arranged and adapted to operate substantially as described with reference to Fig. 7 of the accompanying drawings.

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Reference has been directed, in pursuance of Section 8, of the Patents Act, 1949, to specification No. 803,383.

#### PROVISIONAL SPECIFICATION

#### Improvements in or relating to Container-Dispensers

We, CALUMET MANUFACTURING CO., INC., a corporation organized under the laws of the State of New York, United States of America, of 565 Fifth Avenue, City of New York, State of New York, United States of America, do hereby declare this invention to be described in the following statement:—

This invention relates to container-dispensers for cosmetics in solid stick form, such as cologne sticks, perfume sticks, deodorant sticks shaving sticks, cream sticks, and the like. These sticks may contain alcohol, essential oils, deodorants, fatty acids and the like.

General objects of the invention are to provide a container-dispenser which is of simple, cheap, practical and durable construction; which is sealed when not in use to prevent leakage or evaporation of the volatile sub-

stances contained in the sticks; which will not contaminate the sticks or suffer deterioration from the substances which they contain, and which will act as a mold to permit the sticks to be cast directly therein, instead of being cast in separate molds as ordinarily.

To these ends, the present invention broadly consists in providing a liquid-tight and airtight container-dispenser for cosmetics in solid stick form and of the volatile variety, comprising a tubular body with a bottom wall, an interiorly threaded follower arranged within the body and having a slidable but non-rotatable engagement therewith, an exteriorly threaded stem also arranged within the body and having cooperative engagement with the follower, said stem being rotatably mounted at its lower end on the bottom wall of the

body, a rotatable knob arranged outside of the body at the base of the container-dispenser and secured non-rotatably to the stem, and a sealing washer outside of the body between the

5 rotatable knob and the bottom wall of the body.  
In one specific embodiment, the container-dispenser comprises a tubular—preferably cylindrical-body closed at the bottom but open at the top for the projection of the stick, 10 a follower embedded in the stick and slidably engaged with ribs on the body to project the stick from or retract it into the body, a long screw-threaded stem extending axially within the body and rotatably mounted in the bottom wall of the body, said stem being threaded 15 to the follower for raising and lowering it within the body, a turning knob also rotatably mounted at the base of the body and rigidly secured to the stem for rotating the 20 latter in opposite directions to actuate the follower, and a removable cover to close the body at the top. All of these parts are composed of molded plastic material which will possess the properties above stated and which 25 will be completely inert with respect to the substances composing the cosmetic sticks. The body of the container is sealed at the base by a rubber washer specially compounded for lubrication, such as silicone rubber, and arranged between the bottom wall of the body 30 and the rotatable knob which actuates the stem. The removable cover will also contain a washer for sealing the body at the top when the cover is in place.

35 As a main feature of the invention, the threaded stem and the turning knob are made integral, as by moulding in one piece, and a swivel connection is provided between this one-piece unit and the tubular body such that 40 the parts may be readily assembled and held together by inserting the stem upwardly through a centrally located hole or opening in the bottom wall of the body. This is accomplished by making the periphery of the bottom wall opening resilient or elastic, as by 45 slitting, and by forming on the stem a circular collar or bead which is of greater diameter than that of said opening. As a result of this construction, when the threaded stem is pushed 50 up through the bottom wall opening, said opening will be temporarily enlarged or expanded to allow the stem collar to pass therethrough and will then, because of the resilient nature of its periphery, return to its 55 original diameter after the collar has reached its proper position above the opening.

60 Once assembled, the stem and knob unit and the tubular body will remain permanently attached, even though the swivel connection will permit the knob to be turned freely in 65 raising and lowering the follower for the projection or retraction of the stick. The rubber washer will prevent any leakage through the bottom wall opening around the stem, the dimensions of the washer being such that it will

not only cover the slits formed around the opening but also create a seal in outlying areas of contact with the turning knob and the bottom wall of the tubular body.

The tubular body has a relatively thin bottom wall which is raised slightly above the 70 lower end of the body to provide an annular well or recess for the reception of a circular disk-like raised portion formed on the turning knob. The bottom wall itself is also formed 75 with a smaller centrally located annular well or recess for the reception of the rubber washer. The top wall of this washer recess is formed with an upstanding cone shape protuberance 80 which has a centrally located spring opening wherein the bearing portion of the stem is rotatably mounted. Such cone shaped protuberance is slitted at one or more places to 85 render the walls of the opening resiliently yielding or elastic, whereby the opening may be expanded or enlarged to permit the parts to be assembled. On its inner wall, the body is formed with two long but narrow diametrically opposed guide ribs for the follower. 90 At the top, the body is reduced in wall thickness and is exteriorly threaded to receive the interior threads of the removable cover, it being noted that the cover when applied has its outer wall flush with the outer wall of the 95 body. The removable cover contains the usual plastic sealing washer for contacting the upper end of the cylindrical body when the cover is applied.

The propelling and repelling of the cosmetic stick is effected by the follower which 100 is made in cup-shaped form to receive and grip the lower end of the stick when the latter is molded in the container. In one form, the follower comprises a circular wall having a 105 diameter slightly less than that of the inner wall of the cylindrical body, a centrally located hub formed with interior screw threads to cooperate with the threaded stem, and a bottom wall which connects the hub with the 110 wall. At the outer extremities, the circular wall is formed with vertical through-cuts or slots to receive the guide ribs within the body.

The follower is raised and lowered within the body by the long screw-threaded stem 115 which is rotatably mounted at the base of the container and made integral with the turning knob. Here it may be noted that the screw threads of the follower and the stem are left-hand threads, so that when the knob is rotated clockwise in the usual manner, the stick 120 will be projected from the container. At its lower end, but spaced some distance above the bottom wall of the body, the stem is formed with a plain circular collar which holds the parts in assembled relation, this collar being 125 of greater diameter than the centrally located opening formed in the bottom wall protuberance. Below the collar, the stem presents a plain cylindrical bearing portion rotatably mounted in the central opening of the body 130

bottom wall protuberance and passing through a similar hole in the rubber washer.

5 The circular base turning knob is of slightly greater diameter than that of the body and is ribbed or roughened to facilitate its rotation by hand. The rim portion of the knob is flat and contacts with the lower cylindrical end portion of the body. As above indicated, the knob has a circular disk-like raised portion to fit within the lower well formed within the body by the raising of its bottom wall. On the top of this raised portion, the knob is formed with another circular disk-like raised portion to fit within the smaller annular wall recess in which the rubber washer is located.

10 The method of assembly will now be clear; the rubber washer is first slipped over the threaded stem and pushed all the way down to its base position on the turning knob. The stem is then inserted into the body from the bottom, passing through the central opening formed in the bottom wall protuberance. Only a slight force is necessary to push the collar at the lower end of the stem through the opening, due to the slitted form of the opening, and once the collar has reached its home position above the opening, the spring fingers forming the opening snap back to their original position and lock the stem with the attached knob in proper assembled position. The cone shape of the protuberance, in which the bottom wall opening is formed, will aid in assembling the parts in this manner. It may be noted that the dimensions of the parts are

35 such that the rubber washer will be placed under compression during the assembly operation, being forced up into and slightly expanded in the receiving well formed in the bottom wall of the body. It may also be noted that the opening through the rubber washer is slightly smaller in diameter than the cylindrical bearing portion of the stem, so that when the washer is stretched over said bearing portion it will exert a compressive force in forming a seal around said portion. The follower is inserted through the open end of the body and then threaded onto the stem by turning the knob in the proper direction until the follower reaches its lowermost position within the body. The casting of the stick in the container may then be carried out by pouring the material in a hot liquid condition from the top and allowing it to cool and solidify. As will be understood, the seal at the bottom of the container will prevent the escape of the hot liquid material. Before or after the liquid congeals, the removable cover may be applied, its washer sealing the container at the top.

40 45 50 55 60 Although a specific embodiment has been described, it is to be understood that the invention is not limited thereto, as it is obvious that various changes may be made in the details of construction and arrangement of parts without departing from the invention.

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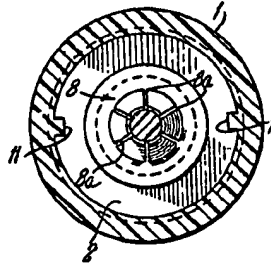
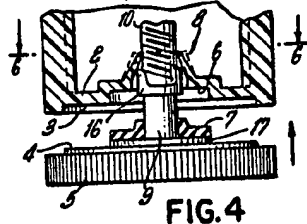
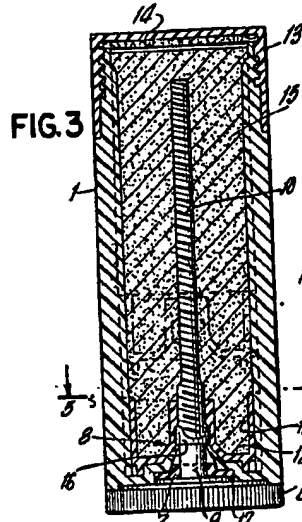
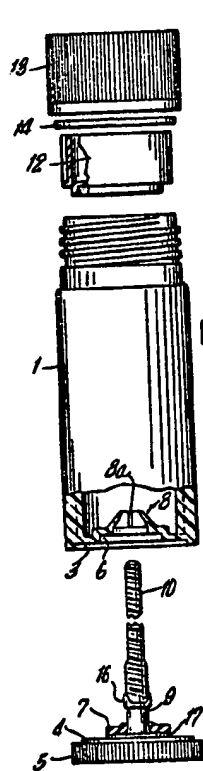
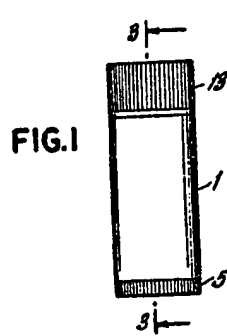


FIG.5

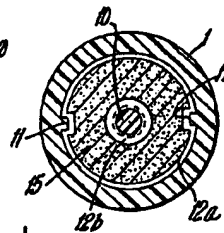


FIG.7

